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## ABSTRACT OF THE DISCLOSURE

This invention overcomes the disadvantages of the prior art by providing a human/machine interface (HMI) for use with machine vision systems (MVSs) that provides the machine vision system processing functionality at the sensor end of the system, and uses a communication interface to exchange control, image and analysis information with a standardized, preferably portable device that can be removed from the MVS during runtime. In an illustrative embodiment, this portable device can be a web-browser equipped computer (handheld, laptop or fixed PC) or a Personal Digital Assistant (PDA). The communication interface on the sensor-end of the system is adapted to communicate over a cable or wireless communication link (for example infrared (IR) or radio frequency (RF)), with a corresponding communication interface in the portable device. The data communicated over the interconnect or link is formatted so that it is read at a data speed and level of resolution (pixel count) that is appropriate to the portable device by use of an image processor at the sensor end.